

I claim as my invention:

1. An aerosol propelled self-cooling container apparatus for retaining and cooling container contents in the form of a food item comprising:

a food container having a container first end and a container second end and having a wall;

5 said container wall at said container first end terminating in an open container seaming rim and said container wall at said container second end having a container stem valve port, and having a container lid sealingly secured to said container seaming rim, said container lid having a container release means for releasing container contents;

A receptacle located within said container and having a receptacle first end adjacent to  
10 said container wall and a receptacle second end extending into said container, said receptacle having a receptacle wall including a receptacle stem valve port at said receptacle first end registering with said container stem valve port and including a flexible valve seat portion at said receptacle second end; said receptacle containing a liquified scented aerosol propellant mixture;

15 a stem valve with a substantially tubular stem valve body having a valve body first end and a valve body second end, and having a valve body passageway extending from said valve body first end passing sealingly through said receptacle stem valve port and passing sealingly through said container stem valve port, and said valve body second end sealingly bearing against said valve seat to close said valve passageway;

20 such that when receptacle pressure inside said receptacle is less than container pressure between said receptacle and said container, the pressure difference between the receptacle pressure and the container pressure produces a resultant pressure on said receptacle wall which sealingly basis said valve seat into sealing contact with said valve body second end,

25 closing fluid communication between said receptacle and said valve body passage to retain  
the aerosol propellant within said receptacle, and such that when the receptacle pressure  
inside the receptacle is greater than container pressure between said receptacle and said  
container, the pressure difference between the receptacle pressure and the container  
pressure produces a resultant pressure on said receptacle wall which moves said valve seat  
30 away from the valve body second end, opening fluid communication between said  
receptacle and said valve body passageway to release the aerosol propellant from within  
said receptacle into the atmosphere surrounding said container, thereby cooling the  
container contents and at the same time releasing a desirable scent into the atmosphere  
surrounding said container.

2. The aerosol propelled self-cooling container of claim 1, wherein said valve  
body second end has an o-ring groove and an o-ring sealing attached to said o-ring groove.

3. The aerosol propelled self-cooling container of claim 1, wherein said aerosol  
propellant is a mixture of hydrocarbons and flame retardants;

4. An aerosol propelled self-cooling plastic bottle container apparatus for retaining  
and cooling plastic bottle container contents in the form of a food item comprising:

5 a plastic bottle container having a plastic bottle container first end and a plastic bottle  
container second end and having a plastic bottle container side wall; said plastic bottle  
container side wall at said plastic bottle container first end terminating in an open plastic  
bottle plastic bottle container threaded neck and said plastic bottle container wall at said  
plastic bottle container second end having a plastic receptacle wall projecting therefrom  
into and within said plastic bottle container; said receptacle wall extending from said  
plastic bottle container second end into said plastic bottle container and having a

10 receptacle first end and a receptacle second end; said receptacle first end including a flexible valve seat portion; said receptacle wall also extending out from said plastic bottle container second end from without said plastic container bottle; said receptacle second end having an open receptacle cylindrical threaded wall forming a receptacle stem valve port and said receptacle containing a liquified scented aerosol propellant mixture;

15 a stem valve with a substantially tubular stem valve body having a valve body first end and a valve body second end, and having a valve body passageway extending throughout said valve body; said valve body passing sealingly through said receptacle stem valve port and said valve body second end sealingly bearing against said valve seat to close said valve body passageway; said valve body first end having a threaded flange cup portion for

20 sealingly threading and securing said valve stem to said open receptacle cylindrical threaded; such that when receptacle pressure inside said receptacle is less than plastic bottle container pressure between said receptacle and said plastic bottle container, the pressure difference between the receptacle pressure and the plastic bottle container pressure produces a resultant pressure on said receptacle wall which sealingly basis said

25 valve seat into sealing contact with said valve body second end, closing fluid communication between said receptacle and said valve body passage to retain the aerosol propellant within said receptacle, and such that when the receptacle pressure inside the receptacle is greater than plastic bottle container pressure between said receptacle and said plastic bottle container, the pressure difference between the receptacle pressure and the

30 plastic bottle container pressure produces a resultant pressure on said receptacle wall which moves said valve seat away from the valve body second end, opening fluid communication between said receptacle and said valve body passageway to release the

aerosol propellant from within said receptacle into the atmosphere surrounding said plastic bottle container, thereby cooling the plastic bottle container contents and at the same time releasing a desirable scent into the atmosphere surrounding said plastic bottle container.

5. A self cooling bottle apparatus for retaining and cooling bottle contents in the form of a food item, comprising:

a food containing bottle having a bottle first end and a bottle second end and having a bottle wall, said bottle wall at said bottle second end having a stem valve port surrounded by a second threaded neck;

said bottle wall at said first end having a first threaded neck and a cap for releasing bottle contents;

a receptacle located within said bottle and having a receptacle first end adjacent to said bottle wall and a receptacle second end extending into the bottle, said receptacle having a receptacle wall including a receptacle stem valve port at said receptacle first end registering with said bottle stem valve port and including a flexible valve seat portion at said receptacle second end, said receptacle containing a liquified propellant mixture;;

a stem valve with a substantially tubular stem valve body having a valve body first end and having a valve body second end and having a valve body passageway extending from said valve body first end to said valve body second end, said valve body second end sealingly bearing against said valve seat with an intervening o-ring to close said valve body passageway; such that when receptacle pressure inside said receptacle is less than bottle pressure between said receptacle and said bottle the pressure difference between the receptacle pressure and the bottle pressure produces a resultant pressure on said receptacle wall which sealingly biases said valve seat into sealing contact with said valve

body second end and said o-ring, closing fluid communication between said receptacle and said valve body passageway to retain the refrigerant within said receptacle, and such that when the receptacle pressure inside the receptacle is greater than the bottle pressure between the receptacle and the bottle the pressure difference between the receptacle pressure and the bottle pressure produces a resultant pressure on said receptacle wall  
25 which moves said valve seat away from the valve body second end and said o-ring, opening fluid communication between said receptacle and said valve body passageway to release the aerosol propellant refrigerant from within said receptacle into the atmosphere surrounding said body thereby cooling the bottle contents.

6. A method of producing a plastic container having an inner receptacle using a plastic preform with threaded necks at opposite ends thereof and with each neck communicating with a chamber comprising the steps of:  
blow molding said first chamber to form a container, and blow molding said second  
5 chamber to form a receptacle within said container.

7. The method of claim 6 wherein said second chamber is inside said first chamber.

8. The method of claim 7 including the further step of filling said receptacle with water.

9. The method of claim 8 including the further step of inserting a stem valve having a threaded cap into said receptacle threaded neck to seat on a valve seat recess of said receptacle.

10. The method of claim 9 including the further steps of filling said container with carbonated beverage, capping said container with a threaded cap, and checking for carbonation column strength of the filled container.

11. The method of claim 10 including the further steps of ejecting the water from said receptacle by pressure feeding a small dose of liquified aerosol propellant into said receptacle through said stem valve to open the seal between the valve seat recess and said stem valve, and changing liquified aerosol propellant through said stem valve into said  
5 receptacle at a lower pressure than the beverage carbonation pressure.

12. A plastic preform to be blow molded into a bottle containing a receptacle, comprising:

a first chamber having a first threaded neck to be blow molded into a bottle;

a second chamber within said first chamber having a second threaded neck  
5 protruding out of said first chamber to be blow molded into a receptacle in said first chamber; and

means for connecting said second chamber to said first chamber at an end thereof opposite said first threaded neck.